ESS/DGK

USS
Gary Works
One North Broadway
Gary, IN 46402

October 9, 1990

Ms. Kathy Prosser
Commissioner
Indiana Department of
Environmental Management
105 South Meridian Street
P. O. Box 6015
Indianapolis, Indiana 46206-6015

USS - Gary Works Agreed Order Cause No. A-900

Dear Ms. Prosser:

The subject Agreed Order was issued on December 7, 1987, and provides a mechanism by which the Order may be extended by IDEM in one-year increments. USX has complied with the provisions specified in pages 5 through 9 of the Order and, therefore, requests that a third extension be granted for the period from December 7, 1990 until December 7, 1991, to allow continued simultaneous operation of five blast furnaces and associated stoves at Gary Works without limitation of hot metal production.

Please advise if further action by USX is necessary.

Very truly yours,

V. V. Nordlund
Area Manager
Environmental Engineering

VVN:jah
E1009B

cc Harinder Kaur
Timothy J. Method
George S. Kolettis

May 1 Meeting FAA PGK

EXPRESS MAIL

United States Steel Corporation - "USS, a division of USX Corporation"

MICHAEL A. HANSON
MANAGER
ENVIRONMENTAL CONTROL
ENVIRONMENTAL AFFAIRS

208 SOUTH LA SALLE STREET
CHICAGO, ILLINOIS 60604
312/853-6686

April 28, 1987

Walter J. Kulakowski
Assistant Commissioner
Office of Air Management
State of Indiana
Department of Environmental Management
105 South Meridian Street
Indianapolis, Indiana 46225

Subject: Request for Variances
Gary Works

Dear Mr. Kulakowski:

We look forward to meeting with you and your staff on May 1 to discuss details of our requests to desulfurize hot metal at the No. 2 Q-BOP Shop and to increase hot metal production at the blast furnaces above the 16,200 ton per day level. Pursuant to my discussions with Tim Method, attached for your review, prior to our meeting, are several exhibits providing information on emission reductions to be used to offset the emissions associated with the aforementioned processes.

Please note that the reductions of 394.2 #/hr. from five sources more than offset the very conservative estimated emissions (using the U.S.EPA's emission factor of 1.09 #/ton of hot metal) of 386 #/hr. from uncontrolled hot metal desulfurization.

This emission reduction package includes the provision that Nos. 15 and 16 coke oven batteries will not operate for the variance period and comprehends blast furnace hot metal production of 18,700 tons per day.

We would again like to express our appreciation to you and your staff for the excellent cooperation extended to USS during these critical times. We'll see you at 10:00 a.m. on May 1.

Very truly yours,

Michael A. Hanson

cc: Dennis McGuire
Tim Method
Don Kuh

Gary Works No. 2 Q-BOP Shop
Hot Metal Desulfurization

Emission Offsets
Summary

Coke Plant Boilers	=	201.6 #/hr.
Tubing Specialties Boilers & Furnace	=	14.3 #/hr.
18" No. 2 & 12" No. 5 Bar Mills	=	34.8 #/hr.
Nos. 15 & 16 Coke Oven Batteries	=	118.6 #/hr.
Blast Furnaces	=	24.9 #/hr.
Total reductions	=	394.2 #/hr.

Uncontrolled hot metal desulfurization at No. 2 Q-BOP Shop	=	386.0 #/hr.
Net reduction	=	8.2 #/hr.

See details in the following pages.

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Coal Fired Coke Plant Boilers

Present SIP allowable:

Boilers Nos. 1,2,3	83.7 #/hr. & 0.31 #/10^6BTU
Boiler No. 4	46.5 #/hr. & 0.31 #/10^6BTU
Boilers Nos. 5 & 6	93.0 #/hr. & 0.31 #/10^6BTU
Total	223.2 #/hr.

For variance period burn natural gas or coke oven gas only on Boilers 1 - 6:

Boiler capacity	=	720 x 10^6BTU/hr.
COG emission factor	=	0.03 #/10^6BTU
Emissions	=	720 x 0.03 = 21.6 #/hr.
Emission reduction	=	223.2 - 21.6 = 201.6 #/hr.

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Tubing Specialties Boilers & Furnace

Present SIP allowable:

Five Boilers		10.3 #/hr. & 0.09 #/10^6BTU
Rotary Furnace No. 4		4.0 #/hr. & 0.03 #/10^6BTU
Total	=	14.3 #/hr.

Shut down Tubing Specialties:

Emission reduction = 14.3 #/hr.

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04/27/87

18" No. 2 & 12" No. 5 Bar Mills

Present SIP allowable:

No. 2 Reheat Furnace	10.3 #/hr. & 0.03 #/10^6BTU
No. 5 Reheat Furnace	9.5 #/hr. & 0.03 #/10^6BTU
No. 2 Grinder Baghouse	7.5 #/hr. & 0.02 gr/dscf
No. 5 Grinder Baghouse	7.5 #/hr. & 0.02 gr/dscf
Total =	34.8 #/hr.

Shut down 18" No. 2 & 12" No. 5 Bar Mills:

Emission reduction = 34.8 #/hr.

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Nos. 15 & 16 Coke Oven Batteries

Present SIP allowable:

Based on coal charges of 51.4 T/hr. for No. 15 & 46.7T/hr for No. 16.

Underfire stacks	
No. 15	18.3 #/hr. & 0.05 gr/dscf
No. 16	19.9 #/hr. & 0.05 gr/dscf
Quench towers	
No. 15	32.9 #/hr. & 0.64 #/T coal
No. 16	29.9 #/hr. & 0.64 #/T coal
Battery Fugitives	
No. 15	5.1 #/hr. & 0.10 #/T coal
No. 16	4.7 #/hr. & 0.10 #/T coal
Battery Pushing	
No. 15	2.6 #/hr. & 0.05 #/T coal
No. 16	2.3 #/hr. & 0.05 #/T coal
Nos. 15 & 16 Control Device baghouse	2.9 #/hr. & 0.03 #/T coal
Total =	118.6 #/hr.

For Variance period do not operate batteries Nos. 15 & 16:

Emission reduction = 118.6 #/hr.

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Blast Furnaces

Present SIP allowable:

Based on hot metal production of:

No. 4 Fce.	=	120.8 T/hr.	
No. 6 Fce.	=	120.8 T/hr.	
No. 7 Fce.	=	108.3 T/hr.	
No.13 Fce.	=	325.0 T/hr.	
		674.9 T/hr.	. = 16,200 T/day

Cast house emissions

No. 4 Fce.	7.2 #/hr. & 0.06 #/T hot metal
No. 6 Fce.	7.2 #/hr. & 0.06 #/T hot metal
No. 7 Fce.	6.5 #/hr. & 0.06 #/T hot metal
No.13 Fce.	48.6 #/hr. & 0.15 #/T hot metal

Stove emissions (Only 4 of 5 fces stoves operating at any one time)

No. 4 Fce.	15.9 #/hr. & 0.03 #/10^6BTU
No. 6 Fce.	11.9 #/hr. & 0.03 #/10^6BTU
Nos. 7 & 8 Fces.	12.3 #/hr. & 0.02 #/10^6BTU
No. 13 Fce.	27.1 #/hr. & 0.02 #/10^6BTU
Total	136.7 #/hr.

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04/27/87

Blast Furnaces

Emission changes due to technology changes:

Blast furnaces Nos. 4, 6, 7 and 8 have three stoves each but only two operate at any time and these two fire fuel only 60% of the time.

Blast furnace No. 13 has four stoves but only three operate at any time and these fire fuel only 70% of the time.

Stove emissions

No. 4 B.F.
3 stoves @ 200 x 10^6 BTU/hr. each
2 operating 60% of the time
2 x 200 x 0.6 x 0.03 #/10^6 BTU = 7.2 #/hr.

No. 6 B.F.
3 stoves @ 200 x 10^6 BTU/hr. each
2 operating 60% of the time
2 x 200 x 0.6 x 0.02 #/10^6 BTU = 4.8 #/hr.

No. 7 B.F. (same as No. 6) = 4.8 #/hr.

No. 8 B.F. (same as No. 6) = 4.8 #/hr.

No. 13 B.F.
4 stoves @ 337.5 x 10^6 BTU/hr. each
3 operating 70% of the time
3 x 337.5 x 0.7 x 0.02 #/10^6 BTU = 14.2 #/hr.

Total 35.8 #/hr.

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04/27/87

Blast Furnaces

Casthouse Emissions

For an average production level of 18,700 tons per day of hot metal, the following average rates are assigned to each blast furnace:

No. 4 Fce.	=	2900 T/day hot metal	=	120.8 T/hr.
No. 6 Fce.	=	2900 " " "	=	120.8 T/hr.
No. 7 Fce.	=	2600 " " "	=	108.3 T/hr.
No. 8 Fce.	=	2500 " " "	=	104.2 T/hr.
No.13 Fce.	=	7800 " " "	=	325.0 T/hr.

No. 4 Fce.	=	120.8 x 0.06 #/T hot metal	=	7.2 #/hr.
No. 6 Fce.	=	120.8 x 0.06 #/T hot metal	=	7.2 #/hr.
No. 7 Fce.	=	108.3 x 0.06 #/T hot metal	=	6.5 #/hr.
No. 8 Fce.	=	104.2 x 0.06 #/T hot metal	=	6.3 #/hr.
No.13 Fce.	=	325.0 x 0.15 #/T hot metal	=	48.8 #/hr.
		Total	=	76.0 #/hr.

Total blast furnace emissions = 111.8 #/hr.

Emission reduction = 136.7 - 111.8 = 24.9 #/hr.

M. A. Hanson
04/27/87

Uncontrolled Hot Metal Desulfurization at No. 2 Q-BOP Shop

Desulfurize up to 8500 tons per day of hot metal at the Q-BOP:

$$\frac{8500 \text{ tons/day} \times 1.09 \text{ \#/ton}}{24 \text{ hrs./ day}} = 386 \text{ \#/hr.}$$

M. A. Hanson
04/27/87